

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

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July 19, 1983

ANPP-27345-BSK/RQT REGION VIAE

U. S. Nuclear Regulatory Commission
Region V
Creskide Oaks Office Park
1450 Maria Lane - Suite 210
Walnut Creek, CA 94596-5368

Attention: Mr. D. M. Sternberg, Chief
Reactor Projects Branch 1

Subject: Final Report - DER 83-17
A 50.55(e) Reportable Condition Relating to Fire Protection
Switches By ITE Gould Failed to Meet The Requirements of TMI
Task 18A

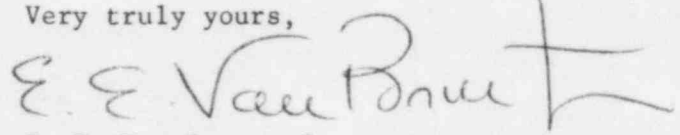
File: 83-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and R. Tucker
on March 4, 1983
B) ANPP-23560, dated April 21, 1983

Dear Sir:

Attached is our final written report of the Reportable Deficiency under
10CFR50.55(e), referenced above.

Very truly yours,



E. E. Van Brunt, Jr.
APS Vice President,
Nuclear Projects Management
ANPP Project Director

EEVBJr./RQT:rb
Enclosure

cc: See Page 2

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PDR ADDCK 05000529
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U. S. Nuclear Regulatory Commission
Page 2

cc: Richard DeYoung, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway - Suite 1500
Atlanta, Georgia 30339

FINAL REPORT - DER 83-17

DEFICIENCY EVALUATION 50.55(e)

ARIZONA PUBLIC SERVICE COMPANY (APS)

PVNGS UNIT 2

I. Description of Deficiency

During a Quality Control inspection of a Bechtel modification to PVNGS Unit 2 load centers, RL pushbutton switches on the load centers were observed to be broken, cracked and detached. The load centers, supplied by Brown Boveri Electric (BBE), were provided with RL pushbutton switches by BBE for local load center activation. A subsequent modification was performed by Bechtel per Design Change Package (DCP) 2CE-ZJ-045 to establish compliance with TMI Task 18A. This task requires incorporation of additional RL pushbutton switches and disconnect switches on the load centers to disconnect devices controlled on the Main Control Board from the second point of control. The additional RL switches provide local control at the load centers to accomplish a hot shutdown due to a postulated fire in the control room.

RL switches installed by both BBE and Bechtel were found to be identically damaged. Bechtel corresponded with BBE concerning the condition and Bechtel concurs with the BBE disposition, as contained in the attached letter, the damage was the direct result of overtightening the switch contact termination screws. The contact connection consists of a small slotted head screw and matching lug molded into the plastic body of the switch. There is no specific torque specified for this terminal and, as indicated by the attached BBE letter, care must be exercised when installing small parts such as this to avoid stripping and/or fracturing the molded plastic parts. The cause is therefore attributed to overtightening which happened either during completion of the DCP or during prerequisite startup activities which checks terminations for tightness and was being performed about the same time as the DCP.

A subsequent 100% inspection of Unit 2 load centers has identified the following as having damaged RL push button switches:

2E-PGA-L33C2	2E-PGB-L32B2	2E-PCG-L34C2
L33C3	L32C2	L36B2
L35C2	L32C3	L36C2
L35C3	L32C4	L36D2
L35D2	L34B2	L36D4
L35D3	L34B3	

Additional inspections in Units 1 and 3 indicate the problem to be isolated to Unit 2.

II. Analysis of Safety Implications

The damaged/broken switches could cause deenergization of Class IE 480V Motor Control Centers, precluding use of safety related equipment. The subject deficiency is thus evaluated as reportable under the requirements of 10CFR50.55(e) since, if left uncorrected, it could adversely affect the safety of operations of the plant during the lifetime of the plant and it represents significant damage to a component.

III. CORRECTIVE ACTION

1. Startup NCR SE-1981, which includes the previous Bechtel Construction NCR's, has been dispositioned to replace all the damaged switches found in Unit 2. Completion of this work was accomplished without damage to any of the replacement switches.
2. To preclude recurrence, a copy of this report will be sent to the Startup Manager and Construction Manager for use in instructing personnel that care must be exercised when installing and/or checking small electrical components.



Brown Boveri Electric, Inc.

ATTACHMENT TO DER 83-17

Manufacturer of I-T-E Electrical Power Equipment

May 12, 1983

Bechtel Power Corporation
P.O. Box 60860
Terminal Annex
Los Angeles CA 90060

ATTN: Mr. W. G. Bingham
Project Engineering Manager
Los Angeles Power Division

SUBJECT: Arizona Nuclear Power Project
Bechtel P.O. 10407-13-EM-017
BBEL S.O. 33-52187

REFERENCE: Your Letter of May 4, 1983
No. B/BBEI-E-44486
MOC 252819 -- DER #83-17 Control Switches

Dear Mr. Bingham:

In response to the referenced letter and my conversation with Ved Arora, I am confirming this evaluation of the four (4) damaged pushbutton switches. As a matter of fact, I am going to quote verbatim the letter I received from our Mr. E. W. Rhoads, our Q. A. Manager.

It is as follows, and I quote:

We have reviewed the information in Bechtel DER 83-17 with respect to the RL pushbutton switches furnished in the BBE load centers to the Palo Verde Nuclear Generating Station and have concluded that there is no deficiency in the switches.

Care must be exercised by installation and checkout personnel when installing or wiring these switches. Mounting screws or contact connections must not be be overtorqued otherwise molded plastic parts will be stripped or fractured.

We recognize that many switchgear and circuit breaker instructions specify specific high torque values to assure proper contact and operation while in some other assemblies or mounting of devices, torque values must be limited to prevent damage by overtorquing.

Many manufacturers of molded phenolic parts, using pneumatic torque tools have learned that periodic calibration of these devices is required to limit the torque values used in assembly to prevent cracking of assemblies.

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JOB 10407
FILE EM-017
1.7.16'83

3	PEM SHAWHAN	
2	PE STIENS	
1	APL KETIH	
	APL MALABUN	
	APL ALEY	
	BE BLACK	
	COORD 1	
	COORD 2	
	POE	
	PA	
	PE/WMY (SFO)	
	PA DA	
	ARCH	
	C/S	
	CONTROLS	
	ELECT	
	MECH	
	NUCLEAR	
	PLANT DESIGN	
	STR & SUP	
	CLIENT	
	PU/LE	



Brown Boveri Electric, Inc.

ATTACHMENT TO DER 83-17

Bechtel Power Corporation
Page Two
May 12, 1983

The number of pushbutton switches damaged at Palo Verde does not appear to be excessive. (end of quote)

My own personal observation has been in the past that many electricians have fairly large screwdrivers, which in fact create this problem. Simply put a smaller screwdriver to work and this would solve the problem.

We certainly hope that the recommendation of outlined solves the problem. Thank you very much for the actual photographs and parts so that our Q.A. could make an accurate and clear evaluation.

Very truly yours,

BROWN BOVERI ELECTRIC INC.

A handwritten signature in dark ink, appearing to read "R L Bagan". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

R. L. Bagan
Sales Engineer

RLB/mae